

Value-Based Service From Usage Viewpoint to Functional Viewpoint

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One usage scenario under discussion in Germany-Japan cooperation project

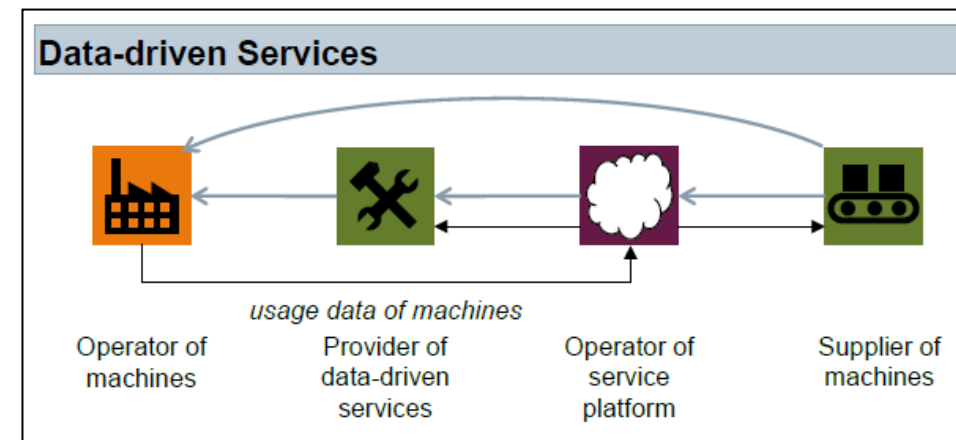
“Condition Monitoring for early fault detection, rapid fault isolation and/or recovery”

- Engineering & setup

1. Connection of a machine
2. Reconfiguration of a machine
3. Development of an analysis algorithm

- Operation & reconfiguration & maintenance

1. Collection and analysis of usage data of a machine
2. Recording additional data on spontaneous request
3. Operation of a service platform
4. Generation of recommendations resp. requests for action
5. Benchmarking of machines
6. Execution of recommendation resp. request for action



9 activities identified
Blue are core activities

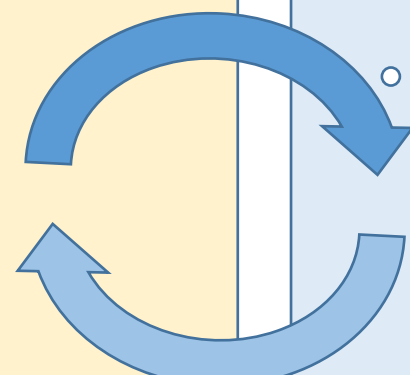
Activities in Usage Viewpoint

■ Engineering & setup

1. Connection of a machine
2. Reconfiguration of a machine
3. Development of an analysis algorithm

■ Operation & reconfiguration & maintenance

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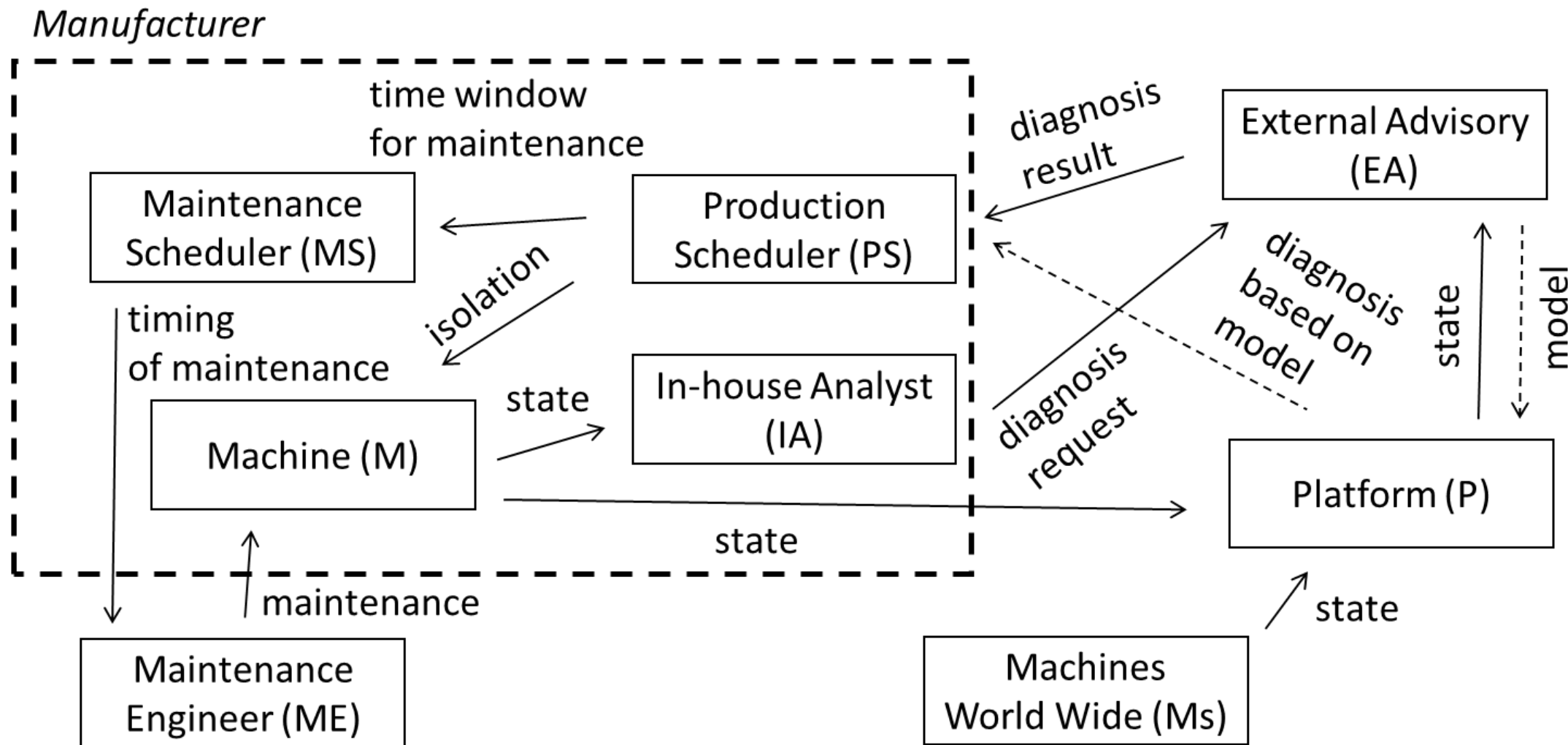
Technical steps in Functional Viewpoint

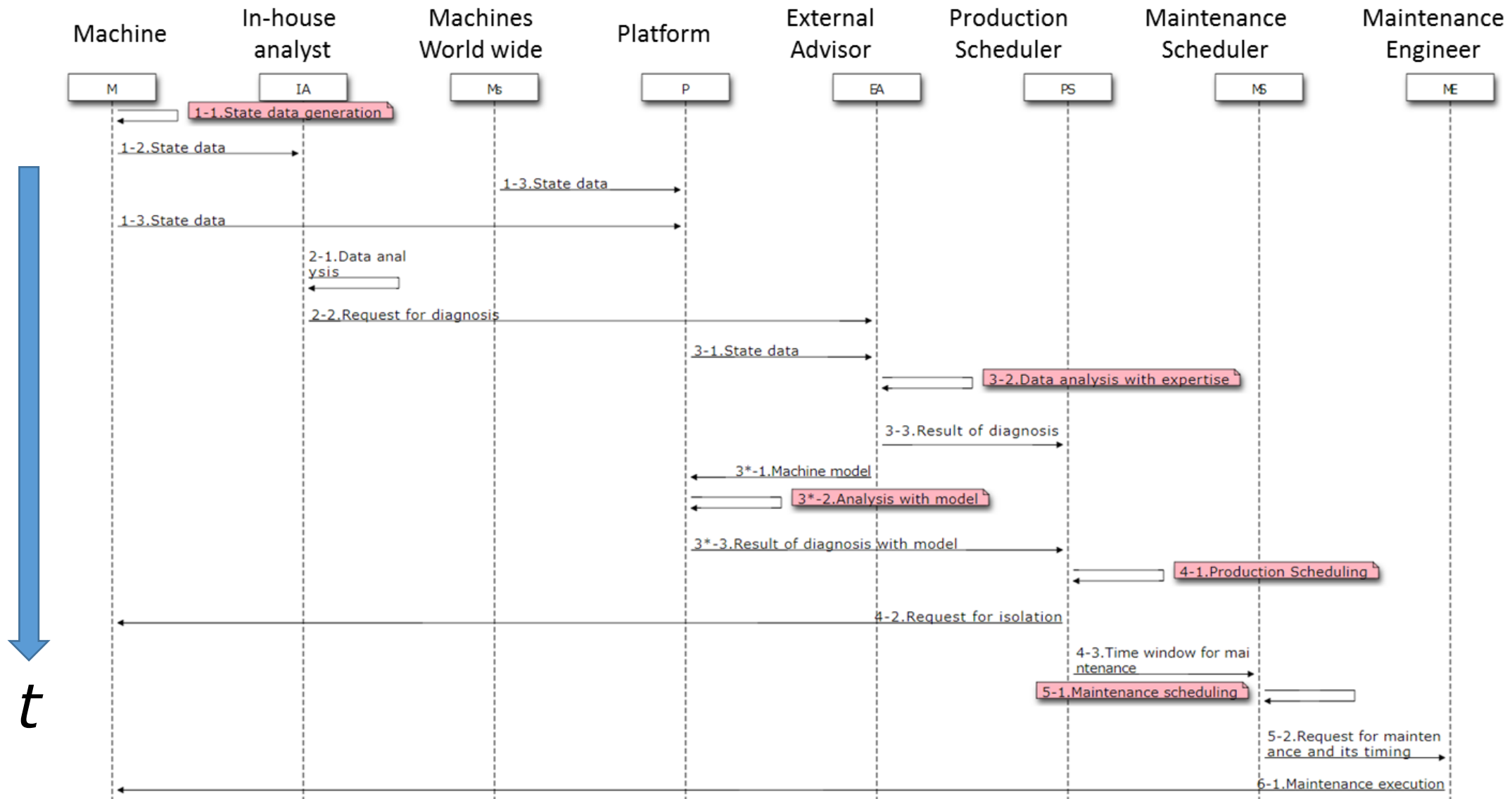
To identify what standards to be used and/or developed, functional and technical assessment is needed

■ Operation & reconfiguration & maintenance

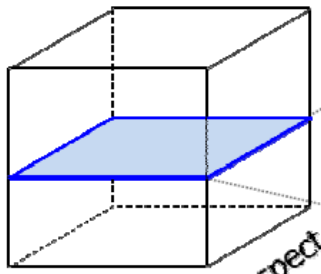
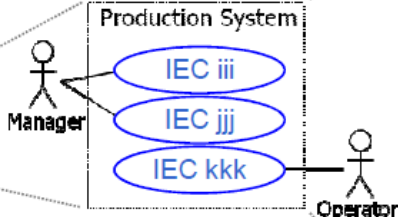
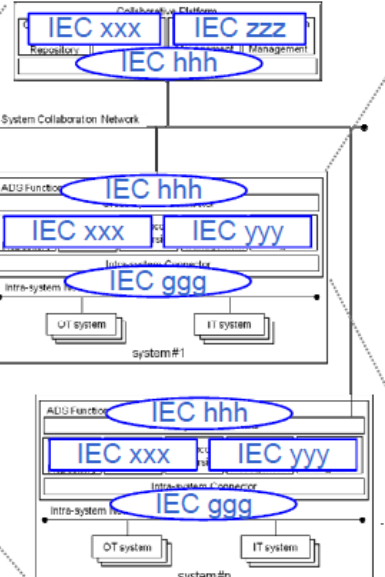
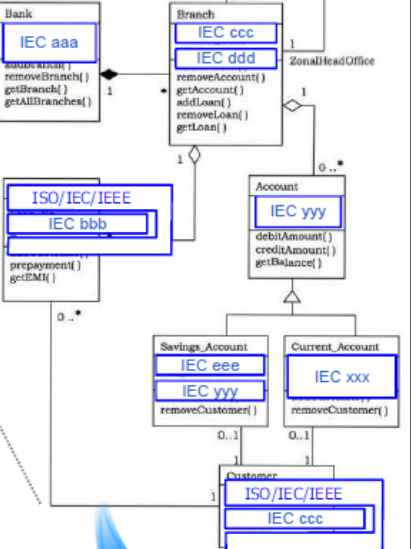
1. Data collection
2. Data analysis
3. Fault detection
4. Fault isolation
5. Maintenance planning
6. Maintenance execution

To be redefined with Usage Viewpoint





Req No.	Related steps	Requirements name	Requirements description	Candidate standards	Gaps
1	1-1	Machine data preparation	Machine shall provide vendor independent interpretation of own state, especially, for planning and management usages		
2	1-3	Data transfer with privacy (non-functional)	The system shall allow distribution of information collected from machines while protecting the privacy of machine users.		
3	5.1	Integrated schedule representation	Both production and maintenance planning systems shall use a common representation various activities and events occurred to in a factory.		

Req No.	Related steps	Requirements name	Requirements description	Candidate standards	Gaps	
	<p>Canvas</p> 	<p>Use-case Model</p> <p>Requirements →</p> 	<p>Function Model</p> 	<p>Data Model</p> 		
			<p>representation various ac... events occurred to in a factory.</p>			

Thank you